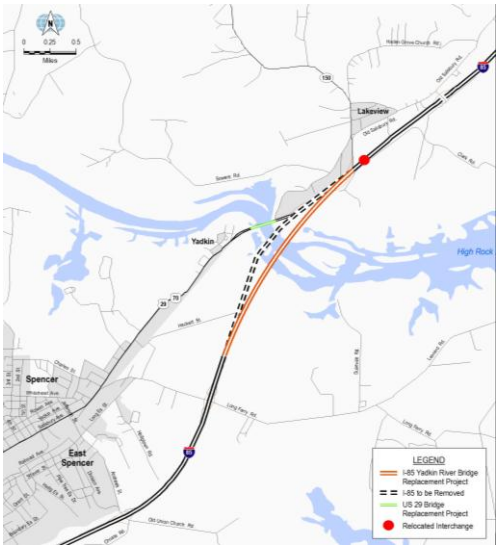
Yadkin River Bridge Project
I-85 at the Davidson and Rowan County Line

General Considerations

The project consists of the widening and reconstruction of I-85 from south of the Yadkin River Bridge to just north of the I-85 Business/I-85 Bypass split in Davidson County. The total project length is approximately 7 miles. The project doubles the capacity of I-85 through this area by adding two new lanes in each direction.

The bridge over the Yadkin River, which is a main element of this project, was constructed in 1955. It was determined to have 10 years of remaining life as outlined in the Environmental Assessment completed in 2000. Therefore, the bridge will reach the end of its "expected life" in 2010.



Traffic Data used in the Environmental Assessment indicated volumes in 1998 of approximately 60,000 vehicles per day. Traffic along I-85 is expected to increase to approximately 114,000 cars per day by 2025. Truck traffic comprises roughly 25% of the traffic with 6% dual axle (i.e. heavy dump trucks) and 18% tractor/semi trailers.

Project Costs

The project was funded and scheduled for a fall 2003 letting as a design-build project by the North Carolina Department of Transportation. The project experienced some delay in getting to the point of letting due to historic issues within the project limits. As these issues were nearing resolution, the contract procurement process began. The project was within two weeks of taking cost proposals when the project was cancelled due to funding issues. The award of the project would have occurred in about 30 days from opening these proposals. The project cost estimate at the time was approximately $175 Million.

Current cost estimates for the project are approximately $400 Million. This number includes completion of all design, environmental mitigation, right-of-way acquisition, toll collection facilities, and contract administration activities. The right of way portion of this total is roughly $15 Million.

Moving Forward as a Toll Facility

The North Carolina Turnpike Authority (NCTA) conducted a "sketch level" Traffic and Revenue Study in the fall of 2007. This study indicates that the project can be financed fully through toll revenues – or with a minimal funding gap. This estimate must be confirmed by further traffic and revenue study and financial analysis.

Efforts need to be undertaken to update the environmental document, perform an in-depth Traffic and Revenue Study, and other associated work. Assuming these activities could begin immediately, a contract award in mid-2009 could be achieved. This would allow for project completion in 2013.

The project is located in a "non-attainment" area as it relates to EPA Air Quality Conformity requirements. The local regional transportation model needs to be updated in accordance with federal legislation. This is due for completion in May 2009. The project cannot move forward as a tolled or non-tolled facility until air quality conformity is met in May 2009. A decision on tolling this project needs to be made by early summer 2008 to ensure that the proper considerations can be taken into account in the modeling process. Any delay in this decision will affect the expected May 2009 date.

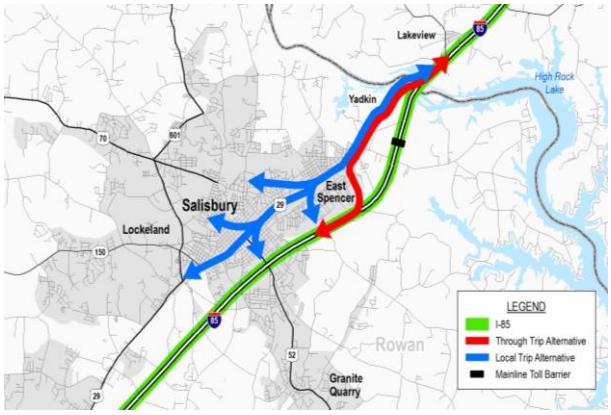
The proposed tolling concept would utilize totally "open road tolling" ("i.e. electronic and video tolling only – no cash lanes). Tolls would only be charged to motorists crossing the new bridges. The remainder of the project would remain free of tolls.

The Challenges:

1. Legislation required to toll an existing facility - The project would require specific legislation by the North Carolina General Assembly allowing the placement of tolls on an existing roadway, which is now strictly prohibited. With legislative approval this project could be awarded relatively quickly as a project constructed and operated by the NCTA.

   From a federal perspective, the Federal Highway Administration (FHWA) allows tolling of non-tolled Interstate highways under special circumstances. These allowances include projects that consist of the reconstruction or replacement of bridges. An agreement needs to be executed with the FHWA that will document federal approval to place tolls on this project.

2. Traffic diversions as a result of those not choosing to pay tolls and taking an alternate route - Existing legislation requires a free, alternate route for any proposed toll project. The US 29-70, NC 150 corridor leading into the Town of Spencer is the free, alternate route. Initial studies indicate that traffic diversions into the Town of Spencer may be sizable. The available alternate routes allowing traffic back on I-85 after exiting to avoid the toll on the bridge are a relatively short distance from the initial exit point. However, geometric constraints, and strategic application of toll rates may temper this diversion to a degree.



Currently, two lanes in each direction on US 29-70, NC 150 enter and exit Spencer on the north side of town. The

proposed design reduces traffic to one lane in each direction on a new structure in the same location as the existing northbound structure. The existing southbound structure is turned over to the town and others for pedestrian usage.

Additionally, traffic signals and congestion may affect the volume of vehicles diverting from I-85.

3. Enforcement of Toll Violators – a large percentage of the users of I-85 in this location are out-of-state travelers. Open Road tolling technology, which is a cashless system, may increase the number of violators particularity when there is a large population of non-residents. The reciprocity of toll collection technology and processes (i.e. transponders from one state working in another, transfers of vehicle registration information) are issues that are not without challenges.

I-85 Vehicle Registration Statistics (Davidson-Rowan Counties)		
Registration	**Passenger**	**Heavy Truck**
In-State	**78%**	**64%**
Out-of-State	**22%**	**36%**
Total	**100%**	**100%**

4. Tolling an Interstate Highway in General – Tolling an Interstate Highway in a state that has not had tolls for over 100 years has many implications beyond those noted above. These include:
    a. Negative Public Sentiment
    b. Political Concerns
    c. Marketing of Electronic Toll Technology to Users (very widespread customer base unfamiliar with the technology)

Conclusions

In conclusion, this project is financeable through toll revenue, it is constructible on a reasonable schedule, and it can operate as a toll facility without the inclusion of cash lanes. There are major considerations on this project that are more about the public's acceptability than about engineering and financial constraints. The decision to move forward as a toll project lies with the local and regional communities and the North Carolina General Assembly.